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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,472	ITO ET AL.	
	Examiner	Art Unit	
	Fereydoun G. Sajjadi	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 17-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 17-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :3/30/2007; 5/22/2007; 10/9/2007.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Request for Continued Examination

A request for continued examination under 37 CFR §1.114, including the fee set forth in 37 CFR §1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR §1.114, and the fee set forth in 37 CFR §1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR §1.114. Applicant's submission filed on October 9, 2007 that includes a response to the final office action dated April 11, 2007, has been entered. Claims 1-6, 8-9 and 17 have been amended, and claims 18-19 newly added No claims were cancelled.

Accordingly, claims 1-11 and 17-19 are pending in the application and under current examination.

Rejoinder of Restricted Species

In view of the teachings of the prior art of record, and upon further consideration, the restriction between the species of retroviral and adenoviral vector is hereby withdrawn.

Information Disclosure Statement

Documents DP-DT submitted in compliance with 37 CFR §1.97(g),(h), and documents EA-EK submitted in compliance with 37 CFR §1.98(a)(2) have been considered by the examiner and indicated as such on Supplemental Forms SB/08.

Response to Claim Objections

Claims 1, 2, 5, 6, 7 and 9 were previously objected to due to informalities relating to inclusion of non-elected species of the invention. In view of Applicants' arguments with respect

to MPEP §809.02 and upon further consideration, the previous claim objections are hereby withdrawn.

New Claim Objections

Amended claims 2-5 are newly objected to due to the following informalities: the claims recite "The population adipocyte of claim 1". Amendments to the claims to recite: "The adipocyte population of claim 1" would be remedial.

New Claim Rejections - 35 USC § 112- New Matter

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Applicants' claim amendments have necessitated the following new grounds of rejection.

Claims 1-7, 9-11, 18 and 19 are newly rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art (hereafter the Artisan), that the inventor(s), at the time the application was filed, had possession of the claimed invention. 37 CFR §1.118 (a) states that "No amendment shall introduce new matter into the disclosure of an application after the filing date of the application".

Claims 1, 6, 9 and 18 are directed to compositions and methods encompassing a population of adipocytes that "is substantially free of non-adipocyte cells". The instant specification is devoid of any such limitation, and fails to describe the nature, the presence or the amounts of non-adipocyte cells in the cultured adipocyte population. Claims 2-5, depend from claim 1, claims 7 and 19 depends from claim 6, and claims 10-11 depend from claim 9.

The instant specification provides a written description support for the isolation of pre-adipocytes from adipose tissue, and their subsequent differentiation in the presence of IBMX, dexamethasone and insulin, to produce mature adipocytes (Example 1, pp. 20-22 and Fig. 1).

Applicants state that support for the amended claims is found, for example, in Figures 1, 4 and 6. However, no such support is apparent for the limitation "wherein the population is

substantially free of non-adipocytes". The instant specification is silent on the presence or absence of any non-adipocyte cells following the culture and differentiation of pre-adipocytes. The specification further fails to define a measurable amount for the absence of non-adipose cells that would constitute a "substantially free" amount of adipocytes. Figure 1 depicts microphotographs of cultured adipocytes from normal culture and ceiling culture, in addition to mature adipocytes following differentiation induction. All panels appear replete with numerous cells. Figure 1 fails to provide adequate information regarding the amount of contaminating non-adipocyte cells. Figure 4 is a photomicrograph comparison between cultured adipocytes transduced with a GFP expressing vector (A) and a GFP fluorescence photograph of the same field (B). While there are fewer cells visible in B, both panels must necessarily contain the same number of cells, as no purification step has been introduced. Further, the number of cells fluorescent in panel B is at least in part due to the transfection efficiency of the vector. Thus it is not clear how the information in Figure 4 may be used to infer the presence or absence of non-adipocyte cells. Figure 6 shows GFP light microscope images of cultured adipocytes under non-differentiation-inducing conditions (A) and "a similar GFP microscope image taken under differentiation -inducing conditions" (B). The Figure fails to provide any information regarding the amount of non-adipocyte cells present or absent.

Thus, at the time the application was filed, an Artisan of skill would not recognize from the disclosure that Applicant was in possession of a population of adipocytes that "is substantially free of non-adipocyte cells", as claimed.

MPEP 2163.06 notes: "If new matter is added to the claims, the examiner should reject the claims under 35 U.S.C. 112, first paragraph - written description requirement. *In re Rasmussen*, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981)." MPEP 2163.02 teaches that "Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed...If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application. MPEP 2163.06 further notes "When an amendment is filed in reply to an objection or rejection based on 35 U.S.C. 112, first paragraph, a study of the entire

application is often necessary to determine whether or not "new matter" is involved. Applicant should therefore specifically point out the support for any amendments made to the disclosure".

This is a new matter rejection.

Response to Claim Rejections - 35 USC § 102

Claim 1-5, 8-9 and 17 stand rejected under 35 U.S.C. 102(e) as being anticipated by Furcht et al. (U.S. Patent No. 7,015,037, Priority to Aug. 5, 1999). The rejection set forth on pp. 2-3 of the previous office action dated April 11, 2007 and pp. 3-4 of the office action dated August 29, 2006 is maintained for claims 1-5, 8-9 and 17, and is further applied to newly added claim 18, for reasons of record and the following commentary.

Applicants traverse the rejection, and state: Applicants have amended claim 1 to set forth "a population of primary cultured adipocytes...wherein the population is substantially free of non-adipocyte cells". Applicants argue that Furcht does not describe the transduction of adipocytes that have been differentiated from adult stem cells, and does not show any data with respect to the purity of the obtained adipocytes. Applicants' arguments have been fully considered, but are not found persuasive.

In response to Applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., adult stem cells) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the instant specification defines the term adipocyte as, mature adipocyte and cells comprising the ability to differentiate into adipose tissue, such as preadipocytes...Preadipocytes normally exist as stromal cells that have not yet differentiated (pp. 4-5, bridging). There is no evidence that adipocytes established from adipose tissue are structurally or functionally different from those established from differentiated stromal mesenchymal stem cells. Moreover, the stromal cells described by Furcht et al. may be from an adult and derived from an organ, such as marrow (column 6, lines 16-19).

With regard to the adipocyte population that "is substantially free of non-adipocyte cells", the instant specification provides no specific definition for an amount of non-adipocyte cells that

may be regarded as "substantially free". The specification additionally fails to identify or refer to any non-adipocyte cells in a culture. Thus, when given their broadest reasonable interpretation in view of the specification, the person of skill in the art would appreciate that the cultured population of adipocytes claimed is not materially different from the cultured adipocytes of Furcht et al., as both are obtained by differentiation and culture of pre-adipocytes.

With regard to the purity of the adipocytes obtained by Furcht et al., it should be noted that there is no teaching or suggestion in Furcht et al. that their adipocyte population of cells are not substantially free of non-adipocyte cells. Applicants argue that obtaining a homogeneous population of adipocytes from bone marrow-derived stem cells is difficult, as evidenced in Figure 1D of Jackson et al. (Journal of Postgraduate Medicine, 53(2): 121-127, 2007), describing the cellular characteristics and adipogenic differentiation potential of adult mesenchymal stem cells (MSCs), by a method similar to that utilized in Furcht. Applicants further argue that the cell population obtained by the method of Jackson et al. contains a substantial number of non-adipocyte cells, stating: "As is clear from Figures 1 (C) and 1 (D), the cell population prepared by the method of Example 1 is much richer in adipocytes than cells obtained by Jackson et al., and is substantially free of non- adipocyte cells."

Such is not found persuasive, because the instant specification does not describe, and the instant claims are not directed to a homogeneous population of adipocytes. Further, the instant specifications' teachings with respect to non-adipocyte cells have been addressed above. Additionally, the differentiation method utilized by Jackson et al. is not similar to that described by Furcht et al., because, as stated in the first column, p. 123 or Jackson et al: "In this instance, the induction medium contains indomethacin instead of BRL 49653 and the maintenance medium contains insulin." Furcht et al. do not utilize either indomethacin or BRL 49653 in their induction medium, and instead teach dexamethasone and insulin or media supplemented with approximately 20% horse serum (see column 19; 3. Adipocyte). It should be further noted that the instant claims have been rejected as being anticipated by Furcht et al., and not as being anticipated by Jackson et al.

Further in regard to the limitation of a population of adipocytes that "is substantially free of non-adipocyte cells", it should be noted that the instant invention relies on the differentiation of adipocyte precursors (as does the invention of Furcht et al.). The instant specification does not

set forth the differentiation of precursor cells exclusively along the adipocyte differentiation path, or the uniform differentiation of all the precursor cells into mature adipocytes. Moreover, Furcht et al. do not utilize a single differentiation medium to differentiate their precursor cells along the various lineages. For example, the differentiation medium for chondroblasts contained TGFβ-1, whereas to induce adipocyte differentiation, TGFβ-1 was omitted and insulin and horse serum were included in the medium (see column 19, lines 30-32 and 46-50). Further, Furcht et al. teach transduction of their cells with eGFP-containing retroviral vector followed by FACS selection and clonal expansion (column 10, lines 52-66). Additionally teaching the detection of differentiated adipocytes using specific ligands such as lipoprotein lipase (LPL), adipocyte lipid-binding protein (aP2), peroxisome proliferator-activated receptor gamma (PPAR), or troglitazone (TRO) and rosiglitazone (RSG), which bind to PPAR.gamma (column 19, lines 52-58). The identification of adipocyte-specific cell surface markers together with the teachings of single cell sorting and ring cloning (column 48, line 49) for clonal expansion are methodologies used to obtain a highly enriched population of differentiated cells. Thus, having selected for differentiation of cells along the adipocyte lineage, Furcht et al. must necessarily obtain an enriched population of adipocytes.

Newly added claim 18 is directed to a population of primary cultured adipocytes, wherein the adipocytes are obtained by ceiling culture. As such, the claim is directed to the product (i.e. the adipocyte population), and not the process of making the product. Further, there is no evidence that adipocytes established from pre-adipocytes in adipose tissue are structurally or functionally different from pre-adipocytes established from differentiated stromal mesenchymal stem cells, especially given the instant specification's definition of an adipocyte (see above). As stated in MPEP 2113: "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Thus, the rejection of claims 1-5, 8-9 and 17 is maintained and is further applied to newly added claim 18, for reasons of record and the preceding discussion.

Response to Claim Rejections - 35 USC § 103

Claims 9-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Furcht et al. (U.S. Patent No. 7,015,037, Provisional Priority to Aug. 5, 1999), in view of Crystal et al. (U.S. Patent Publication No: 2002/0076395; filed Dec., 23, 1998), and further in view of Baetge et al. (U.S. Patent No: 5.639.275; filed May 25, 1995). The rejection set forth on pp. 3-4 of the previous office action dated April 11, 2007, and on pp. 5-6 of the action dated August 29, 2006 is maintained for reasons of record.

Applicants traverse the rejection, arguing that the population of adipocytes obtained by the method of Furcht contains substantial numbers of non-adipocyte cells. Thus, the primary reference Furcht does not teach an implant composition comprising a population of primary cultured adipocytes which is substantially free of non-adipocyte cells. Further arguing, Furcht never teach a population of adipocytes which is substantially free of non-adipocyte cells, and fail to even point out the importance of purity/homogeneity; as using an implant comprising adipocytes for gene therapy, purity and homogeneity of adipocytes is very important in terms of safety; and the disclosures of Crystal and Baetge do not supply the elements missing from Furcht. Applicants' arguments have been fully considered, but are not found persuasive.

The response to arguments directed to the reference of Furcht et al. regarding the population of adipocytes that is substantially free of non-adipocyte cells, has been addressed in the discussion above. Notwithstanding the absence of purity and homogeneity of adipocytes as limitations in the instant claims, Furcht et al. describe the use of their adipocytes for implantation in reconstructive surgery, as well as treatment of Type II diabetes (column 25, lines 50-52), in addition to the encapsulation of genetically altered cells for delivery into a patient to produce insulin (paragraph 31, lines 35-64). Thus, Furcht et al. recognize the utility of their differentiated adipocytes for therapy, and further, describe the enrichment of their cells by various selection techniques, that include FACS analysis, clonal expansion and specific differentiation along a defined path (as described above), thus necessarily resulting in a population of adipocytes that is substantially free of non-adipocyte cells.

Thus, the rejection of claims 9-11 is maintained for reasons of record and the preceding discussion.

Claims 6-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Furcht et al. (U.S. Patent No. 7,015,037, Provisional Priority to Aug. 5, 1999), in view of Hertzel et al. (J. Lipid Res. 41:1082-1086; 2000). The rejection set forth on pp. 4-5 of the previous office action dated April 11, 2007, is maintained for reasons of record and the following commentary.

Applicants disagree with the rejection and state claim 6 has been amended to set forth a method of producing a population of primary cultured adipocytes that are substantially free of non-adipocyte cells. Arguing, the Examiner concedes that Furcht does not disclose the establishment of cultured adipocytes from adipose tissue; and does not disclose anything about preparing a population of adipocytes which is substantially free of non-adipocyte cells, and also fails to suggest the importance of purity/homogeneity of adipocytes when using an adipose cell population as an implant for gene therapy. Further arguing, these teachings are also clearly missing from Hertzel. Applicants' arguments have been fully considered, but are not found persuasive.

The response to arguments directed to the reference of Furcht et al. regarding the population of adipocytes that is substantially free of non-adipocyte cells, as well as the utility of the adipocytes for gene and cell therapy has been addressed in the discussion above. It should additionally be noted that the instant claims are directed to a method of producing adipocytes that include the step of isolating adipocytes and establishing a primary culture. The instant claims fail to recite that the cultured adipocytes are derived from adipose tissue, as the instant specification defines adipocyte as inclusive of pre-adipocytes and stromal cells. Nonetheless, Hertzel et al. describe the primary culture of adipocytes from gonadal fat pads (first column, p. 1082) and their transduction with adenoviral vector encoding foreign DNA (Abstract). Hertzel et al. additionally describe the enrichment of the primary culture of adipocytes by repeated washes and centrifugation, followed by recovery of floating adipocytes (first column, p. 1082).

Thus, the rejection of claims 6-7 is maintained for reasons of record and the preceding discussion.

New Claim Rejections - 35 USC § 103

Applicants' claim amendments have necessitated the following new grounds of rejection.

Claims 6 and 19 are newly rejected under 35 U.S.C. §103(a) as being unpatentable over Furcht et al. (U.S. Patent No. 7,015,037, Provisional Priority to Aug. 5, 1999), in view of Hertzel et al. (J. Lipid Res. 41:1082-1086; 2000), and further in view of Zhang et al. (J. Endocrinology 164:119-128; 2000).

The claims encompass a method of producing a population of primary cultured adipocytes comprising the step of isolating adipocytes and establishing a ceiling culture; and transferring and stably maintaining in the genome a foreign DNA operably linked to a promoter sequences and encoding secreted insulin, wherein the population is substantially free of non-adipocyte cells.

Furcht et al. describe genetically modified adult stem cells that may be cultured and differentiated into adipocytes, for gene therapy, (Abstract). The isolation of the bone marrow derived mononuclear cells is described in Example 1(column 44), and their differentiation into adipocytes is outlined in Example 2 (column 46). Adipocytes derived from the stem cells can be used for the treatment of Type II diabetes (column 25). Furcht et al. specifically describe a number of secreted genes that may be used for gene therapy of diabetes (column 30). Additionally described are viral transfer vectors, including retroviruses (column 32). Retroviral vectors are extensively described in column 35. The transduction of marrow derived stem cells with retroviral vectors encoding eGFP is described in Example 4 (column 48).

Further describing: following *in vitro* culture and gene transfer, the transfected cells may be introduced locally or infused systemically (column 30). Specific examples of engraftment by intramuscular injection or stereotaxic transplantation into mice are described in Example 10 (columns 54-55). Furcht et al. additionally state that the genetically altered stem cells can also be encapsulated in an inert carrier to allow the cells to be protected from the host immune system while producing the secreted protein (column 31). A number of pharmaceutically acceptable inert carriers materials, that include polymers and capsules are described in column 31. With specific reference to treatment for diabetes, the authors state that autologous stem cells that have been genetically altered with a retroviral vector to produce insulin at physiologically therapeutic

levels can be encapsulated for delivery within the patient's tissues, to produce insulin for extended periods of time (column 31). Furcht et al. further describe stem cells transfected with factor IX, that secrete the protein for at least 8 weeks after infusion into mice (column 30).

While Furcht et al. do not describe the establishment of their cultured adipocytes from adipose tissue, the culture of primary adipocytes from adipose tissue for gene transfer was well known in the art, as described by Hertzel et al., (second column, p. 1082), who describe the *in vitro* adenoviral transfer of a reporter gene via an adenovirus vector to primary murine adipocytes (Abstract). The authors additionally reference the *in vitro* transfection of rat and human adipocytes by other researchers (first column, p. 1083). Regarding the presence of non-adipocyte cells in their adipocyte cell population, Hertzel et al. describe the primary culture of adipocytes from gonadal fat pads (first column, p. 1082) by enrichment using repeated washes and centrifugation, followed by recovery of floating adipocytes (first column, p. 1082). The resulting adipocyte population thus being substantially free of non-adipocyte cells.

Neither Furcht et al., nor Hertzel et al. describe culturing adipocytes by ceiling culture. Zhang et al. describe the ceiling culture of mature human adipocytes that uses their buoyant property to allow them to adhere to a floating glass surface (Title and Abstract), thus curing the deficiency of ceiling culture in Furcht et al. and Hertzel.

Zhang et al. state that ceiling culture overcomes the shortcomings of adipocyte suspension culture (Abstract), thus providing the motivation to employ ceiling culture for expansion of adipocytes.

Therefore, a person of ordinary skill in the art would have been motivated to combine the teachings of Furscht et al., Hertzel et al. and Zhang et al. to substitute primary cultured adipocytes for differentiated adipocytes as a matter of design choice, and to forego the isolation and differentiation of mesenchymal stem cells. A person of ordinary skill in the art would have been further motivated to include the ceiling culture method of Zhang et al. to expand the primary cultured adipocytes, because such method would overcome the shortcomings of suspension culture.

A person of ordinary skill in the art, having applied the gene transfer method of Furcht et al., to enriched primary cultured adipocytes, as taught by Hertzel et al. and their expansion using the ceiling culture method of Zhang et al. would be able to practice the instantly claimed method

of the invention, with a reasonable expectation of success. Thus it would have been *prima facie* obvious for a person of ordinary skill in the art, to substitute primary ceiling cultured adipocytes for the differentiated adipocytes of Furscht et al. at the time of the instant invention.

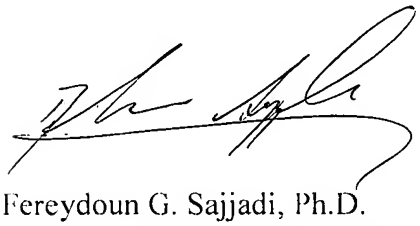
Conclusion

Claims 1-11 and 17-19 are not allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fereydoun G. Sajjadi whose telephone number is (571) 272-3311. The examiner can normally be reached on 6:30 AM-3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on (571) 272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Examiner, USPTO, AU 1633